UNIVERSITY OF MINNESOTA LIBRARIES
RECD
NOV 28 1942

The American Fertilizer

Vol. 97 NOVEMBER 7, 1942 No. 10

A-W Co.

ALL FERTILIZER MATERIALS

Foreign and Domestic

NITRATE of SODA

SULPHATE of AMMONIA

ORGANIC AMMONIATES

SULPHUR

ASHCRAFT-WILKINSON CO.

VEGETABLE OIL MEALS
AND
FEEDSTUFFS

Exclusive Distributors Duval Texas Sulphur

HOME OFFICE
ATLANTA, GA.
Cable Address: ASHCRAFT

OFFICES
CHARLESTON, S. C.
NORFOLK, VA.

Let a St. Regis Packaging Specialist tell you if changes in your fertilizers call for changes in your bags

New materials are being used in fertilizers . . . many are hygroscopic . . . analyses are getting higher. These changes, in all probability, will require changes in your bags. It will cost you nothing to find out. Just send for a St. Regis Packaging Engineer.

Give him permission to make a practical study of your problems at first hand, so that he may design bags of proper construction for your specific requirements. After his review of your situation he will be able to tell you how little it will cost to give your customers the sure protection and extra convenience of St. Regis Multiwall Paper Bags.

Specializing in this kind of work, the St. Regis Engineer is familiar with the new packaging problems facing fertilizer manufacturers. Special moisture resistant sheets, for example, have been developed to eliminate the danger of bags rotting and breaking with hygroscopic fertilizers.

St. Regis is a *specialized service* organization, with the widest experience in the design and manufacture of custom-built Multiwall Paper Bags and paper bag filling machines . . . and *in their use. All* this specialized knowledge and experience is yours for better packaging when you call St. Regis.

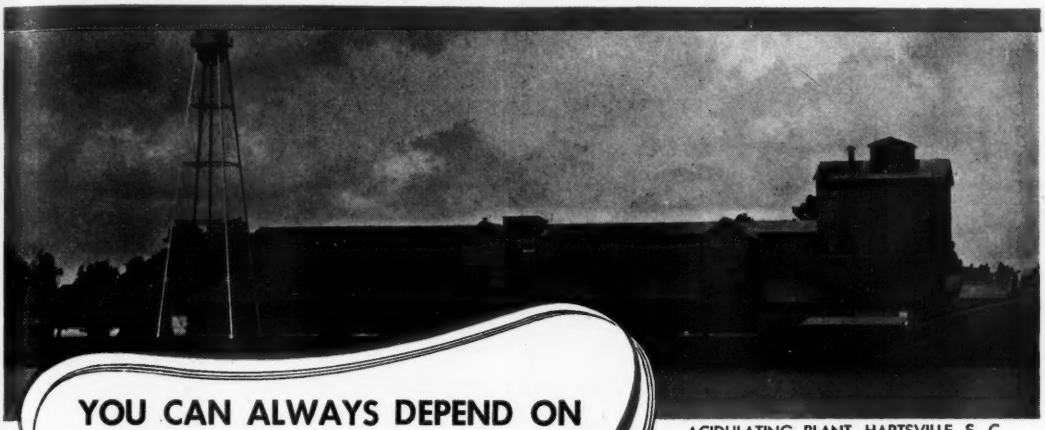
St. Regis Multiwall Paper Bags are furnished in both open-mouth and valve types — and special moisture-resistant sheets may be used for hygroscopic materials.

MULTIWALL
St. Regis PAPER BAGS
MULTIPLY PROTECTION · MULTIPLY SALEABILITY

ST. REGIS PAPER COMPANY
TAGGART CORPORATION • THE VALVE BAG COMPANY
NEW YORK: 230 Park Avenue
CHICAGO: 230 No. Michigan Avenue
BALTIMORE: Baltimore Trust Building

Offices also at:
Birmingham, Ala. Dallas, Tex. Denver, Colo. Franklin, Va. Los Angeles, Calif. Nazareth, Pa. New Orleans, La. San Francisco, Cal. Seattle, Wash. Toledo, Ohio

Published every other Saturday. Annual subscription: In the United States, $3.00; Canada and Mexico, $4.00; other countries, $5.00. Entered as second-class matter, January 15, 1910, at the Post Office at Philadelphia, Pa. under Act of March 3, 1879. Registered in United States Patent Office. Publication office, 1330 Vine St., Phila., Pa.



ACIDULATING PLANT, HARTSVILLE, S. C.

YOU CAN ALWAYS DEPEND ON
International
FOR AMPLE SUPPLIES
OF SUPERPHOSPHATE

INTERNATIONAL *Crop Producing* FERTILIZER MATERIALS

Sixteen *International* acidulating plants, one conveniently located near you, assure you ample supplies of superphosphate as well as other *International* fertilizer materials. Quantity—quality—service! Look to *International* for the materials that will enable you, in turn, to control the quality of your fertilizers which your farm customers depend on for the high crop yields.

Florida Pebble Phosphate Rock
68%—70%—72%—75%—77%
Tennessee Phosphate Rock
66%—63%—72%—75%
Superphosphate—Multiple Superphosphate
American Potash Salts
All Standard Grades of Potash
Including SUL-PO-MAG
(Sulphate of Potash-Magnesia)
Sodium Silico-Fluoride
Complete Fertilizers

International

INTERNATIONAL PRODUCTS

MINERALS & CHEMICAL *Corporation*

GENERAL OFFICES: 20 NORTH WACKER DRIVE, CHICAGO

MINING AND MANUFACTURING
PHOSPHATE • POTASH • FERTILIZER • CHEMICALS

MENTION "THE AMERICAN FERTILIZER" WHEN WRITING TO ADVERTISERS.

POTASH
TRONA
SALTS

AMERICAN POTASH and CHEMICAL CORPORATION

70 PINE STREET NEW YORK, N. Y.

Pioneer Producers of Muriate in America

Branch Offices

214 Walton Building
ATLANTA, GEORGIA

542 Conway Building
CHICAGO, ILLINOIS

609 South Grand Avenue
LOS ANGELES, CALIF.

MURIATE and SULPHATE of POTASH

Plant foods are urgently needed to grow the crops which feed our nation and our armed forces.

Our plant at Trona, Calif., is operating at capacity to provide supplies of these essential plant foods, and other materials needed in the national effort.

Manufacturers of Three Elephant Borax and Boric Acid

See page 23

...THE...

AMERICAN FERTILIZER

"That man is a benefactor to his race who makes two blades of grass to grow where but one grew before."

Vol. 97 NOVEMBER 7, 1942 No. 10

Industry Committee Adopts List of Grade Substitutions

THE Fertilizer Industry Advisory Committee met on Monday, October 26th. Those present were: H. M. Albright, R. B. Douglass (for O. F. Smith), Franklin Farley (for John T. Burrows), S. B. Haskell, Bayless Haynes, M. H. Lockwood, John Morris (for W. B. Tilghman), J. E. Sanford, C. D. Shallenberger, and J. A. Woods. WPB was represented by T. E. Milliman, H. H. Meyers, Dale Kieffer, M. K. Derrick, George McCarty, C. L. Clement, W. E. Lafkin, and J. H. Stallings; OPA by J. K. Westberg and Cedric Gran and P. W. Lowery; USDA by P. H. Groggins, William F. Watkins, F. W. Parker. Members of the special committee on distribution present were: R. B. Douglass, chairman; J. E. Sanford, L. D. Hand, and W. S. Rupp. (M. K. Derrick was also a member.)

With its report, dated September 22nd, the committee on distribution of approved fertilizer grades submitted lists of the officially designated grades for each individual State, to serve as a guide for the sale of fertilizer on an historical basis. These lists show the 1942–1943 official grades and the 1941–1942 nitrogen content of the grades which they should supersede, according to recommendation of WPB and USDA. At its meeting on Monday the Advisory Committee approved these lists, which are included elsewhere in this issue.

The committee on distribution presented a new section 5 to replace former section 5 of the report. The new section was approved by the Advisory Committee and recommended to WPB. It reads as follows:

> 5. We understand that our instructions contemplate, in general, distribution of mixed fertilizers on an historical basis, and our deliberations have proceeded along that line. Fertilizer sales should be based upon past history of individual customers without any effort to tie grades of fertilizer to individual crops except in so far as the farmer's history may have this result.
>
> In making sales on the historical basis there will doubtless arise, in some instances, a necessity for some adjustments to take care of changes in the farmer's acreage of different crops. Where the farmer makes such shift of acreage, the same historical basis with respect to rate of application for each crop should govern, with the resulting change in the total quantity of fertilizer sold to him.
>
> For instance, if a farmer in 1941–42 planted 40 acres of cotton for which he purchased 10 tons of fertilizer, and in 1942–43 plants only 30 acres of cotton, he would be sold 7.5 tons of fertilizer for his 1942–43 cotton crop. Similarly, for any crop as to which his 1942–43 acreage is increased over 1941–42, his total of fertilizer would be correspondingly increased. This same principle would apply to any increase or decrease in the acreage of any crop.
>
> In cases where there is no past history on which to proceed, the fertilizer manufacturer must accept the responsibility of supplying fertilizers to customers in a fair manner upon the basis of recommendations of State agronomists as to grades and rates of application.
>
> When crop goals are established by

U. S. Department of Agriculture for 1943, it is expected certain crops will be designated as vital or essential war crops. In making sales of fertilizer, preference must be given in all cases to these "war" crops, even at the expense if necessary of some of the less essential crops. In instances where the same crops have been grown on a given farm, the same historical basis with reference to rate of application for each crop should govern, but in the absence of an historical rate of application the recommendations of the State Agricultural Experiment Stations should serve as a guide in making such sales.

The plan of including a victory garden special in all States, a 3–8–7 with ½ unit of inorganic and 2½ units of organic nitrogen, was approved and it is expected that WPB Order M–231 will be amended accordingly.

Present indications are that the plan of distribution as finally approved by WPB will be embodied in an order.

Approved Grades for 1942 and 1943

ALABAMA

1941–42 Grades

Those with 2% or less Nitrogen to be replaced by 0–14–10
Those with 3% or more Nitrogen to be replaced by ..... 4–10–4, 4–10–7, 4–12–4(A)

(A) For floricultural use only.

ARKANSAS

1941–42 Grades

Those with 2% or less Nitrogen to be replaced by 0–14–7, 0–10–20
Those with 3% and 4% Nitrogen to be replaced by 3–9–18, 3–12–6, 3–12–12
Those with 5% or more Nitrogen to be replaced by 4–10–7, 4–12–4, 4–8–12

CONNECTICUT

1940–41 Grades

Those with 2% or less Nitrogen to be replaced by 0–14–14, 0–20–20, 0–9–27
Those with 3% and 4% Nitrogen to be replaced by 3–12–6, 3–12–15
Those with 5% Nitrogen to be replaced by ..... 4–9–7, 4–12–4, 4–10–10, 5–3–5(a), 6–3–6(a)
Multiple-strength grades* 4–16–20, 5–20–10, 6–15–15

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(a) To be used only for tobacco.

DELAWARE

1940–41 Grades

All grades used on grians, except corn, to be replaced by ... 0–12–12, 0–14–7, 0–14–14, 0–16–8, 0–20–20, 0–24–12
Those with 2% Nitrogen to be replaced by 2–8–10, 2–12–6, 2–12–12
Those with 3% and 4% Nitrogen to be replaced by 3–9–15, 3–12–6
Those with 5% Nitrogen to be replaced by 4–8–12, 4–12–4, 4–12–8
Those with 6% or more Nitrogen to be replaced by ..... 5–10–5(A), 10–0–10(B), 10–6–4(B)
Multiple-strength grades* 3–12–15, 3–18–9, 4–16–8, 4–16–20, 4–24–12, 7–21–7

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) To be used only on vegetables. (B) To be used only for top-dressing vegetables.

FLORIDA

The distribution of mixed fertilizers containing chemical nitrogen for the State shall be as follows:

Grades with 2% Nitrogen 1.38%
Grades with 3% Nitrogen 22.05%
Grades with 4% Nitrogen 59.82%
Grades with 5% Nitrogen 8.74%
Grades with 6% Nitrogen 2.63%
Grades with over 6% Nitrogen 5.38%

Approved Grades
for 1942 and 1943

GEORGIA

1940–41 Grades

Those with less than 2% Nitrogen to be replaced by....0–14–10
Those with 2% Nitrogen to be replaced by....2–12–6
Those with 3% Nitrogen to be replaced by....2–12–6, or 3–8–5, 3–9–6, 3–9–9, 3–12–6
(which must carry more than one unit of organic nitrogen)
Those with 4% Nitrogen to be replaced by....3–9–6, 3–9–9, 3–12–6, 4–2–10(A), 4–9–3(B)
Those with 5% or more Nitrogen to be replaced by....4–8–4, 4–8–6, 4–8–8, 4–12–4, 10–0–10(C)

(A) to be used for shade tobacco only. (B) to be used for tobacco plant beds only. (C) for side dresser only.

ILLINOIS

1940–41 Grades

All grades used on small grains and corn to
be replaced by....0–12–12, 0–12–36, 0–9–27, 0–16–8, 0–14–7, 0–14–14, 0–20–10, 0–20–20
For grades used on crops other than small grain and corn:
Those with 2% Nitrogen to be replaced by....2–12–6, 2–16–8
Those with 3% Nitrogen to be replaced by....3–9–18, 3–12–12
Those with 4% or more Nitrogen to be replaced by....4–10–6, 4–12–4, 10–6–4(A)
Multiple-strength grades*....3–18–9, 4–24–12

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) to be used for only top-dressing vegetables.

INDIANA

1940–41 Grades

All grades used on small grains and corn to be
replaced by....0–9–27, 0–10–20, 0–12–12, 0–14–7, 0–12–36, 0–12–24, 0–16–8, 0–14–14, 0–20–10, 0–20–20
For grades used on crops other than small grains and corn:
Those with 2% Nitrogen to be replaced by....2–8–16, 2–12–6, 2–16–8
Those with 3% Nitrogen to be replaced by....3–9–18, 3–12–12
Those with 4% or more Nitrogen to be replaced by....4–10–6, 4–12–4, 10–6–4(A)
Multiple-strength grades*....3–18–9, 4–24–12

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) to be used for top-dressing vegetables.

IOWA

1940–41 Grades

All grades used on small grains and corn to be
replaced by....0–9–27, 0–12–12, 0–14–7, 0–12–36, 0–14–14, 0–16–8, 0–20–20, 0–20–10
For grades used on crops other than small grains and corn:
Those with 2% Nitrogen to be replaced by....2–12–6
Those with 3% Nitrogen to be replaced by....3–9–18, 3–12–12
Those with 4% or more Nitrogen to be replaced by....4–10–6, 4–16–4, 4–12–4, 10–6–4(A)
Multiple-strength grades*....3–18–9, 4–24–12

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) Top-dressing vegetables only.

KENTUCKY

1940–41 Grades

Those with 2% or less Nitrogen to be replaced by....0–12–12, 0–14–7, 0–14–14, 0–16–8, 0–20–20, 0–20–10
Those with 3% Nitrogen to be replaced by....2–12–6
Those with 4% Nitrogen to be replaced by....3–9–6, 3–9–18, 3–12–3, 3–12–12
Those with 5% or more Nitrogen to be replaced by....4–8–8, 4–10–6, 4–12–4
Multiple-strength grades*....3–18–9, 4–12–8, 4–16–4, 5–10–10

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

LOUISIANA

1941–42 Grades

Those with 2% or less Nitrogen to be replaced by....0–14–7, 0–14–14
Those with 3% and 4% Nitrogen to be replaced by....3–12–6, 3–12–9, 3–12–12, 3–15–0(A)
Those with 5% or more Nitrogen to be replaced by....4–10–7, 4–8–12, 4–12–4, 9–9–0(B)

(A) to be used for rice only. (B) to be used for sugar cane only.

Approved Grades
for 1942 and 1943

MAINE

1940–41 Grades

Those with 2% or less Nitrogen to be replaced by....0–14–14, 0–20–20
Those with 3% and 4% Nitrogen to be replaced by....3–12–6, 3–12–15
Those with 5% Nitrogen to be replaced by....4–8–12, 4–9–7, 4–12–4, 4–10–10
Multiple-strength grades*....4–16–20, 5–20–10, 6–9–15, 6–12–18, 6–15–15

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

MARYLAND

1940–41 Grades

All grades used on grains except corn, to be replaced by....0–12–12, 0–14–7, 0–14–14, 0–16–8, 0–20–20, 0–24–12
For grades used on crops other than small grain:
Those with 2% and 3% Nitrogen to be replaced by....2–8–10, 2–12–6, 2–12–12
Those with 4% Nitrogen to be replaced by....3–9–15, 3–12–6
Those with 5% Nitrogen to be replaced by....4–8–12, 4–12–4, 4–12–8, 4–16–4
Those with 6% or more Nitrogen to be replaced by....5–10–5, 10–0–10(A), 10–6–4(B), 6–6–8(C)
Multiple-strength grades*....3–12–15, 3–18–9, 4–16–8, 4–16–20, 4–24–12, 7–21–7

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) To be used only for side dresser. (B) To be used only for top-dressing vegetables. (C) To be used on tobacco plant beds only.

MASSACHUSETTS

1940–41 Grades

Those with 2% or less Nitrogen to be replaced by....0–9–27, 0–14–14, 0–20–20
Those with 3% and 4% Nitrogen to be replaced by....3–12–6, 3–12–15
Those with 5% or more Nitrogen to be replaced by....4–9–7, 4–10–10, 4–12–4, 6–3–6 (A), 5–3–5 (A)
Multiple-strength grades*....4–16–20, 5–20–10, 6–15–15

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) To be used for tobacco only.

MICHIGAN

1940–41 Grades

All grades used on grains except corn to be
replaced by....0–12–12, 0–10–20, 0–12–36, 0–20–10, 0–14–14, 0–12–24, 0–14–7, 0–20–20, 0–9–27, 0–16–8
For grades used on crops other than small grains:
Those with 2% Nitrogen to be replaced by....2–8–16, 2–12–6, 2–16–8
Those with 3% Nitrogen to be replaced by....3–9–18, 3–12–12
Those with 4% or more Nitrogen to be replaced by....4–10–6, 4–12–4, 4–16–6, 10–6–4(A)
Multiple-strength grades*....3–18–9, 4–24–12

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) To be used only for top-dressing vegetables.

MINNESTOA

1940–41 Grades

All grades used on grains except corn to be
replaced by....0–9–27, 0–10–20, 0–12–12, 0–14–7, 0–12–36, 0–12–24, 0–14–14, 0–16–8, 0–20–20, 0–20–10
For grades used on crops other than small grains:
Those with 2% Nitrogen to be replaced by....2–12–6, 2–16–8
Those with 3% Nitrogen to be replaced by....3–9–18, 3–12–12
Those with 4% or more Nitrogen to be replaced by....4–10–6, 4–12–4, 10–6–4(A)
Multiple-strength grades*....3–18–9, 4–24–12, 8–16–12

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) To be used only for top-dressing vegetables.

MISSISSIPPI

1941–42 Grades

Those with 2% or less Nitrogen to be replaced by....0–14–7
Those with 3% or more Nitrogen to be replaced by....4–8–4, 4–8–8

(Continued on page 22)

Looking Toward Next Year*

By CLAUDE R. WICKARD
Secretary of Agriculture

THE last few times the Foods Requirements Committee has met in my office we have been working on agricultural production goals for next year. We hope to have those goals ready early next month. We will announce them, of course, as soon as they are completed. After that, we plan to hold a series of regional meetings in different parts of the country with Agricultural War Boards and farm leaders to talk about the goals and how we can best achieve them.

I wish that it were possible to announce the goals now, for I know that farm families are very anxious to learn what the nation needs from them, and are eager to get started on next year's production. I know that most other families are interested in the goals, too, because those goals will have a lot to do with the food supplies that will be available to civilian families during 1943 and 1944.

So, although the goals themselves are not yet ready, I want to tell you as much as I can today about how things are shaping up for next year. Some of the main points already are clear, especially now that this year's farm production can definitely be written down as one that has broken all previous records.

In looking ahead, we can see that farmers now are beginning to feel the full impact of the war, much more than they did a year ago, or, for that matter, even several months later, after Pearl Harbor. For one thing, demand and price are not the uncertain factors they used to be in making forecasts. Both the demand and the price of farm products are subject to many wartime controls. On the other hand, factors like labor, equipment and transportation are more uncertain than they used to be.

On the demand side, we know that military and lend-lease needs for food will be half again as great as they were in 1942 and that they will take about one-fifth of our total food production. That one-fifth, of course, is an average figure for all food. For many leading commodities the combined needs of our fighting men and our allies will come to a lot more than that. They will need more than a quarter of our meat, for instance, a third of our lard production, nearly one-third of our eggs and half of our output of canned vegetables.

In other words, there is a wartime demand for a good deal more food than farmers can produce, so the first thing to do in planning for next year's farm production is to decide what items are needed most. In addition to the military and lend-lease needs the people of this country need great quantities of good nourishing food. Also it is time to give even more attention than we have before to building up reserves of food. We need to do this for two reasons: first to build up reserves against a time when bad weather might cause a drop in our food production; and second, to be ready to meet any increase in demand for our food.

After making all of these determinations as to how much food we need, the Foods Requirements Committee then has to take account of all of the bottlenecks to food production. As you know, many of these bottlenecks are serious threats indeed—shortage of farm labor and equipment, shortages of transportation and processing facilities.

On the whole, I believe that the goals next year will call for more livestock production than in 1942. The total crop acreage we will aim at will be about the same, but if yields are average, we won't get the tremendous production that we got with this year's record yields. Some people may ask why we don't increase total acreage. The answer is: we don't have the land resources for any further expansion. For some individual crops, of course, the acreage goals will be larger than they were last year. For some they will be about the same and for others they will be smaller.

The whole program will take into account several factors which were not so pressing last year. In vegetables, for example, I believe it will be advisable to have them grown near to the centers where they will be used.

*A radio talk broadcast Friday, November 6, 1942, in the Department of Agriculture period, National Farm and Home Hour, by Blue Network and associated radio stations.

We just don't have the transportation any more for long haul of many kinds of vegetables, either by train or by truck. There will be some exceptions, of course, for the vegetables which are most essential to good nutrition. But on the whole the general pattern will be to discourage long hauls.

Every time I look at the general food situation I am struck by these things. First, our total production must be as large as we can possibly produce. Second, we must produce things needed most and which can be stored and conserved. Third, we civilians are going to have to make adjustments in our consumer habits because we won't have all of everything we would like to have. I don't mean that we will go hungry. The nutritional value of our civilian food supply will be about the same as it was in the 1930's, but undoubtedly we will run into shortage of many individual foods. Of course, our total food production this year is the largest on record, but by the time we feed our Army and help feed our allies and build up the reserves which we must have, there won't be as much of many things the civilians would like to buy with their present large incomes.

Next year goals will be hard to reach; I'm sure of that. Some people may think some of them are too high, or feel that farmers can't plan their production so exactly. But remember, many people felt that way about the goals for 1942 until farmers showed what they could do through careful planning and cooperation and sheer hard work.

Without question the most difficult problem for next year is going to be that of having enough people to carry on the necessary production. We just wouldn't have had this year's record production if it hadn't been for the women, the older people and the boys and girls who took the place of the men who went to war and to industry. And every month more workers are leaving for war and industry. So next year farmers will have to obtain even more help from older men, from women and from boys and girls than they did this year.

Speaking of what farm boys and girls can do, I was very pleased this week to learn of the work done by the 4-H clubs. Last April the million and a half 4-H members held a nationwide mobilization week and pledged their best efforts to helping the war program.

Well, these boys and girls have lived up to the pledges they made, and have done more besides. They are setting the next week aside as 4-H Achievement Week, and tomorrow some of them are going to tell the Farm and Home audience about the things they have accomplished. I have seen a report on their work, and I am proud of every one of those boys and girls. These are just some of the things they did: They grew three million bushels of vegetables; they canned 14 million jars of food. They raised 300,000 hogs, and fed and cared for 83,000 head of dairy cattle and 6½ million chickens.

That's some of the best news I have heard recently. Next year we will have to depend on farm boys and girls much more than we have this year, and it's good to know how much we can rely on them.

Potash Deliveries Increase

The American Potash Institute, Inc., announces that deliveries of agricultural potash by the four major producing Companies within the continental United States, Canada, Cuba, Puerto Rico, and Hawaii during the third quarter of the calendar year 1942 amounted to 161,412 tons of actual K_2O, equivalent to 311,067 tons of potash salts. Constituting this total were 232,569 tons of muriate, 51,993 tons of manure salts, and 26,506 tons of sulphate. In addition, deliveries for chemical uses amounted to 22,195 tons of salts, equivalent to 13,622 tons of K_2O. These figures include salts of domestic origin only.

For the first nine months of 1942 deliveries of agricultural K_2O amounted to 430,428 tons, equivalent to 820,289 tons of potash salts, consisting of 614,850 tons muriate, 124,022 tons manure salts, and 81,417 tons sulphate. In addition, deliveries for chemical uses amounted to 76,655 tons of salts, equivalent to 47,150 tons of K_2O.

POTASH DELIVERIES

Short Tons K_2O

(United States, Canada, Cuba, Hawaii, Puerto Rico)

	Jan.-Sept. 1942	Jan.-Sept. 1941	July-Sept. 1942	July-Sept. 1941
Muriate.....	363,655	266,680	137,575	94,819
Manure Salts..	31,029	19,758	12,998	12,394
Sul. and Sul. Pot. Mag....	35,744	19,852	10,839	6,082
Total Agr....	430,428	306,290	161,412	113,295
Chem. Potash..	47,150	36,406	13,622	16,623
Grand Total	477,478	342,696	175,034	129,918

Farm Prospects Forecast by Department of Agriculture

FARMERS in 1943 probably will produce more livestock than in 1942, crop production may be smaller than the record production of 1942, unless weather conditions again are exceptionally favorable, and farm income probably will surpass this year's record, the U. S. Department of Agriculture said on November 2nd in summarizing the agricultural outlook.

Demand and price, usually major factors of uncertainty in forecasting the farm outlook, are now subject to increasing wartime controls. Problems of farm labor, equipment, supplies, transportation and marketing are becoming more important than ever.

Net income of farm operators for 1942, including Government payments, is estimated at nearly 9.8 billion dollars—about a billion more than the previous record in 1919. For 1943 it is forecast at 10 to 10.5 billion dollars.

Total agricultural production in 1942 is nearly 12 per cent greater than the record set in 1941, and 40 per cent greater than in 1918, the Bureau of Agricultural Economics now estimates. October estimates indicated for the first time that the corn crop this year may exceed the record set in 1920; and it is being grown on 12 per cent less acreage. Abundant feed supplies and good prices are expected to stimulate increased livestock production again next year. However, unless the weather is again exceptionally favorable, it is unlikely that crop production will equal the volume of 1942, when per acre yields appear to be averaging 13 per cent above previous records.

Crop acreage should be at least as large as in 1942, but war demands and the need to conserve transportation, labor and production supplies will bring about many shifts from crops of low utility to crops of higher utility.

Military and lend-lease buying of food in 1943 is expected to be 50 per cent greater than in 1942, taking one-fifth of current agricultural production. Civilian demand also will continue to increase, though more slowly than in 1942. Prices of agricultural products in 1943 under ceilings, should remain close to present levels—about 6 per cent above the average estimated for the entire year 1942.

There will be enough food in the total supply, although there may be shortage of many individual commodities. The average civilian probably will be able to consume about as much meat in 1943 as in recent years, but unprecedented demand resulting from record incomes will make rationing necessary. Awaiting rationing, civilian adults have been asked to limit their consumption of meats to 2½ pounds a week. Secretary Wickard has asked farmers to produce at least 10 per cent more pork in 1943, and to raise at least 200 million additional chickens this fall and winter.

Supplies of canned fruits and vegetables for civilians may be smaller next year, increasing demand for the fresh products. Secretary Wickard has announced goals for winter vegetables requesting these acreage increases: carrots, 30 per cent; lima beans, 25 per cent; snap beans, 15 per cent; onions, 15 per cent.

The demand for dairy products in 1943 is expected to exceed the supply. Bread grains will be abundant. Altogether, the nutritional value of the civilian food supply is expected to be about the same as in 1935–36. It may contain less fats, carbohydrates, and vitamin A than in 1941.

Farmers' greatest problem will be to secure adequate labor in 1943. Trends up to early October indicated agriculture might need to recruit 1½ million new workers next year. More recently the War Manpower Commission has announced a program to retain essential workers on dairy, livestock, and poultry farms. This should help ease the drain on farm labor. Additional workers next year may come from the ranks of women, children reaching working age or not previously employed, townspeople, older men and those physically handicapped, nonagricultural workers living on farms, and farm operators, not now fully employed on their own farms.

In 1943, only 20 per cent as much new farm machinery will be made as in 1940. At present 18 types are being rationed, and about 4 times as many types may be rationed next year. Supplies of repair parts should be adequate. New fencing will be scarce, and will be rationed.

(Continued on page 20)

THE AMERICAN FERTILIZER
ESTABLISHED 1894
PUBLISHED EVERY OTHER SATURDAY BY
WARE BROS. COMPANY
1330 VINE STREET, PHILADELPHIA, PA.

A MAGAZINE INTERNATIONAL IN SCOPE AND CIRCULATION DEVOTED EXCLUSIVELY TO THE COMMERCIAL FERTILIZER INDUSTRY AND ITS ALLIED INDUSTRIES

PIONEER JOURNAL OF THE FERTILIZER INDUSTRY

WARE BROS. COMPANY
PUBLISHERS
1330 VINE STREET PHILADELPHIA, PA.
A. A. WARE, EDITOR

ANNUAL SUBSCRIPTION RATES

U. S. and its possessions, also Cuba and Panama	$3.00
Canada and Mexico	4.00
Other Foreign Countries	5.00
Single Copy	.25
Back Numbers	.50

THE AMERICAN FERTILIZER is not necessarily in accord with opinions expressed in contributed articles that appear in its columns. Copyright, 1942, by Ware Bros. Company.

Vol. 97 NOVEMBER 7, 1942 No. 10

Principal Articles in This Issue

PAGE

INDUSTRY COMMITTEE ADOPTS LIST OF GRADE SUBSTITUTIONS 5

LOOKING TOWARD NEXT YEAR 9

Potash Deliveries Increase 10

FARM PROSPECTS FORECAST BY DEPARTMENT OF AGRICULTURE 11

American Potash Ownership 12

Texas Gulf Sulphur Company Receives Army-Navy Award 14

FERTILIZER MATERIALS MARKET:

New York 15

Baltimore 15

Charleston 17

Chicago 17

Tennessee Phosphate 18

American Potash Ownership

Leo T. Crowley, Alien Property Custodian, on October 28th, announced that he had taken over 480,000 shares of American Potash & Chemical Corporation stock owned by foreign nationals. This action, Mr. Crowley added, implies no criticism of the present officers and directors of American Potash & Chemical Corporation, who have a long record of successful management and who will continue in charge of the Company's business.

Further light on the situation was furnished by a statement from F. Cecil Baker, president of the American Potash and Chemical Corporation, as follows:

"American Potash & Chemical Corporation some months ago reported to the United States Alien Property Custodian in Washington certain circumstances and rumors which appeared to indicate that a block of the Company's stock had been acquired by German nationals.

"An investigation by Government officials cooperating with Corporation executives disclosed that approximately 480,000 shares of American Potash & Chemical Corporation stock probably are being held in Europe for the benefit of certain German interests.

"The stock in question was sold by Consolidated Gold Fields of South Africa, Ltd., a British Company which had been responsible for the financing and development of the Trona enterprise since its inception in 1913, to Hope & Company of Amsterdam, one of the most respected banking houses in the Netherlands. This sale took place in 1929.

"Since the sale of this stock the officials of the American Potash & Chemical Corporation have been assured many times by Hope & Company that none of it was being held for the benefit of German interests.

"The Alien Property Custodian announced today that there are no grounds for criticism of the present officers and directors of American Potash & Chemical Corporation who he stated have a long record of successful management and will continue in charge of the Company's business.

"The Company is engaged in the production of heavy chemicals and is playing an outstanding part in meeting the Nation's war demands for critical materials.

"Approximately 450,000 tons of industrial chemicals will be produced by the Company's plant at Trona, California, this year, with an estimated production of some 500,000 tons next year.

"Of this tonnage 70 per cent or more has

gone into war production and the balance to satisfy essential civilian needs."

There has never been any question in the minds of the fertilizer industry as to the whole-hearted cooperation of the Company in the war effort. In fact, it must be a source of satisfaction to the officials of the Company when they consider that this enemy-owned stock interest is helping the cause of the United Nations so materially.

September Sulphate of Ammonia Production

Production of by-product sulphate of ammonia during September totaled 62,942 tons, according to the figures reported to the U. S. Bureau of Mines. This is 1.8 per cent below August production and is accounted for by the shorter month. Sales during September amounted to 66,296 tons, leaving stocks on hand at the end of the month of 54,623 tons. Production of by-product ammonia liquor, which is now unobtainable as a fertilizer material, continued at the level of about 2,800 tons NH_3 per month.

	Sulphate of Ammonia Tons	Ammonia Liquor Tons NH_3
Production:		
September, 1942	62,942	2,833
August, 1942	64,077	2,807
September, 1941	61,661	2,514
January-September, 1942	575,197	25,184
January-September, 1941	554,895	23,461
Shipments:		
September, 1942	66,296	2,958
August, 1942	68,444	2,812
September, 1941	65,657	2,676
Stocks on Hand:		
September 30, 1942	54,623	858
August 31, 1942	58,148	850
September 30, 1941	39,894	837
August 31, 1941	44,072	810

Sulphur Production Higher

During the first 8 months of 1942, sulphur production totaled 2,379,137 tons, an increase of 25 per cent over the same period of 1941 when the amount was 1,902,234 tons. Shipments during the same period were 2,332,777 tons in 1942 and 2,141,878 tons in 1941. Producers' stocks of sulphur at mines, in transit, and in warehouses were built up from 4,685,000 tons on January 1st to 4,927,000 tons on August 31st.

Fertilizer Ceiling May be Raised

OPA plans to puncture fertilizer ceilings sufficiently to take care of increased costs of nitrogen and transportation that have occurred during the past year. The changeover from waterborne to rail transportation due to war conditions, plus the increase in rail rates, has been keenly felt by the industry on hauls of sulphur from Texas and phosphate rock from Florida as well as shipment of complete fertilizers from plants. Synthetic nitrogen solutions, the industry's least expensive source of nitrogen, have been taken from fertilizers and diverted to the direct war effort, consequently it has become necessary to secure nitrogen from other sources, so far as possible. Some of these other sources such as surplus quantities of seed meals (peanut, soya, cotton, linseed) are far more expensive than the chemical elements and ordinarily are used in relatively small amounts in fertilizers, their main consumption being as feeds for animals. Details of the plan for raising fertilizer ceilings have not yet been completed.

Gas and Tires for Fertilizer Salesmen

The efforts of the National Fertilizer Association to obtain a ruling from OPA placing fertilizer salesmen in the preferred class for the allocation of gasoline and tires, have not met with a great measure of success.

In a letter dated October 26th, John R. Richards, Chief of the Gasoline Rationing Branch, stated that, while fertilizers are necessary productive equipment essential to the war effort under gasoline rationing rules, the marketing of fertilizer by salesmen is not essential to the war effort unless the salesman renders special technical service such as diagnosis of soil conditions and instruction as to types of fertilizers needed. This is a factual question which must be decided by each local board. In general, the eligibility for "C" rations of gasoline is being tightened so as to eliminate salesmen.

In the matter of tire rationing, fertilizer salesmen are eligible for recapped tires providing it can be shown that fertilizer sales cannot be made by any other means, including mail or telephone, that other means of transportation are not available, and that failure to equip the cars of the salesmen would hamper the war effort by depriving the community of necessary commodities.

Texas Gulf Sulphur Company Receives Army-Navy Award

The Texas Gulf Sulphur Company received the Army-Navy "E" flag for outstanding accomplishments in the production of war materials in a ceremony Monday afternoon, November 2nd, at Newgulf, Texas. More than four thousand employees of the firm and their guests heard the Company's achievements lauded in speeches by Brigadier General Ray L. Avery, Commanding Officer, Edgewood Arsenal, and Commandant, Chemical Warfare School, and by Rear Admiral P. W. Foote, United States Navy.

In conferring the Army-Navy "E" award flag to the employees of the Newgulf Mines and the Galveston Loading Plant of the Texas Gulf Sulphur Company, Brigadier General Avery said:

"The award . . . is indeed a military decoration. It is being conferred upon the field of battle. Would that it could be upon the field of victory; but, unfortunately, victory is not yet ours. By rapid strides, taking for granted the full cooperation of each and every one of you, victory will be ours and at that time an award far greater than any will be forthcoming. While you may well be proud of your accomplishments to date, I urge each and every one of you to keep firmly in mind the message which I have attempted to convey: *Victory in this great conflict will be ours only as a result of your continued untiring efforts in the field of production.*

"Your Government has officially determined that the Texas Gulf Sulphur Company shall be included among those organizations engaged in war production which occupy a position in the upper strata of our War Industry; and this enviable distinction has been achieved in its entirety because of the diligent and untiring efforts of each and all of you here present today. The manner in which you have assumed and discharged the duties incumbent upon you as Americans is worthy of the highest praise. In this behalf, I extend to you sincere congratulations."

Today supplies of sulphur in the United States are ample, so that it is no longer called a critical material—but this has not always been the case. Originally the sulphur consumed in the United States came from Italy and Japan, and when the cost of this imported sulphur became prohibitive, acid manufacturers turned to pyrite from Spain as a raw material. The American consumer, however, was almost entirely dependent on foreign sources for supplies of sulphur or sulphur-bearing materials. Fortunately, at the beginning of the present century, the foundations of the American sulphur industry were laid so that fourteen years later, in 1917, a domestic source of sulphur existed.

Today we are again engaged in a war. Large imports of pyrite from Spain are out of the question. U-Boats, sea raiders, and enemy control of foreign deposits, however, cannot prevent us from obtaining the sulphur necessary for our war effort. The North American continent has become self sufficient in sulphur and its factories can readily obtain all of their requirements. Further, the American sulphur industry is able to supply sulphur to our Allies in quantities sufficient to meet their most exacting needs.

As Mr. Walter H. Aldridge, President of Texas Gulf Sulphur Company, has indicated, sulphur has proved to be one all-important raw material available in amounts equal to demand—one war material at least where it has been unnecessary to search either for new sources or new methods of production.

BRADLEY & BAKER

FERTILIZER MATERIALS - FEEDSTUFFS

AGENTS - IMPORTERS - BROKERS

155 E. 44th Street
NEW YORK

BRANCHES

Clinton St. & Danville Ave. Baltimore, Md. | 505 Royster Building Norfolk, Va. | 1252 West Beaver Street Jacksonville, Fla.

504 Merchants Exchange Bldg., St. Louis, Mo.

FERTILIZER MATERIALS MARKET

NEW YORK

Additional Allocations of Chemical Nitrogen Not Expected to Materialize in Near Future. No Change in Nitrate of Soda Prices. Potash Production Sold for Coming Season. Shortage of Fish Meal Reported.

Exclusive Correspondence to "The American Fertilizer"

NEW YORK, NOVEMBER 2, 1942.

Sulphate of Ammonia

Although there have been some reports that additional quantities of inorganic ammoniates would be released for the manufacture of mixed fertilizers, especially solutions, it appears very doubtful that any considerably larger proportions can be allocated to the fertilizer manufacturers until such time as the new government plants are actually in operation. Certain quantities of sulphate of ammonia must be shipped to the Allies and the allocation of these quantities will probably prevent any great increase in allocation for domestic use.

Nitrate of Soda

The previous October price has been announced by the domestic manufacturer of nitrate of soda for November deliveries and it is probable that the price of the Chilean nitrate will not be increased.

Potash

There is no change in the situation, all manufacturers having sold their expected production through March, 1943, and under these circumstances there is practically no material being offered for spot sale.

Nitrogenous Material

This material is moving regularly against contracts previously made but there are practically no offerings for new sales.

Fish Meal

There is not much chance of the fish factories in the Chesapeake Bay district accumulating sufficient quantities of fish scrap to fill contracts previously made and there will undoubtedly be a considerable shortage of fish meal.

Superphosphates

There is no change in this situation. Deliveries have started for shipment against purchases of triple superphosphate made by the British and it is expected that these deliveries will continue.

BALTIMORE

Feed Market Taking Most Vegetable Meal Production at Present Fertilizer Price Ceiling. Fish Catch Below Orders Booked. Bag Developments Expected.

Exclusive Correspondence to "The American Fertilizer"

BALTIMORE, NOVEMBER 3, 1942.

There have been no outstanding features in connection with the market on fertilizer materials during the past two weeks.

Organic Ammoniates.—The market on tankage and blood is sold up at ceiling prices for feeding purposes. Prices on vegetable meals are also about on par with tankage and blood, so that if fertilizer manufacturers endeavor to derive any great part of their nitrogen from meals, it would add materially to the cost of the finished product. This matter has been called to the attention of Governmental authorities in the hope it will be rectified to enable manufacturers to supply the necessary fertilizer to secure such crops which will be urgently needed next year.

Nitrogenous Material.—There is no change in the situation, with offerings few and far between, and with very little interest being manifested by fertilizer manufacturers.

Sulphate of Ammonia.—Deliveries continue to be made in smaller quantities as compared with last year's deliveries, but some fertilizer manufacturers hope that the Government will authorize either a larger portion of sulphate to be delivered or release for fertilizer manufacturers of more liquid ammonia which

FERTILIZER MATERIALS

LET US QUOTE YOU ON YOUR REQUIREMENTS OF THESE MATERIALS

PHOSPHATE ROCK

SUPERPHOSPHATE

DOUBLE SUPERPHOSPHATE

NITRATE *of* SODA

SULPHURIC ACID

SULPHATE *of* AMMONIA

BONE MEALS

POTASH SALTS

DRIED BLOOD

TANKAGES

COTTONSEED MEAL

BONE BLACK

PIGMENT BLACK

SODIUM FLUOSILICATE

ARMOUR FERTILIZER WORKS

General Offices: Walton Building, Atlanta, Ga.

Division Sales Offices:

Albany, Ga.
Atlanta, Ga.
Augusta, Ga.
Baltimore, Md.
Birmingham, Ala.
Chicago Heights, Ill.
Cincinnati, Ohio
Columbia, S. C.
Columbus, Ga.
East St. Louis, Ill.
Greensboro, N. C.
Havana, Cuba
Houston, Texas
Jacksonville, Fla.
Montgomery, Ala.
Nashville, Tenn.
New Orleans, La.
New York, N. Y.
Norfolk, Va.
Presque Isle, Me.
San Juan, P. R.
Sandusky, Ohio
Wilmington, N. C.

has recently been used for national defense purposes.

Nitrate of Soda.—There is nothing new in the situation and established prices will continue for the month of November. Deliveries are still being allocated, based on last year's tonnage.

Fish Scrap.—Fishing on the Chesapeake Bay has now come to an end and it is reported that the catch was such that practically none of the manufacturers were able to deliver "if and when made" contracts in full. There are no prices on fish meal as the margin between the scrap and the finished product is so small that processors would not be able to come out whole in the conversion, and up to the present time Government Authorities have not permitted any increase in ceiling prices.

Superphosphate.—There is no change in the situation. The market continues on the basis of $9.60 per ton of 2,000 pounds, basis 16 per cent, run-of-pile, f. o. b. producers' works, Baltimore.

Bone Meal.—The position of this market is likewise unchanged, and business is practically at a standstill.

Potash.—There is nothing new to report as practically all domestic productions are now fully sold up. Some manufacturers figured on using additional potash to offset decreased nitrogen content, but were unable to make much headway in securing supplemental supplies of potash.

Bags.—There has been no change in the situation as far as burlap bags are concerned. There is very little burlap coming through from Calcutta and probably will not be arriving in quantities until after the turn of the year. In the meantime, bag manufacturers and buyers are not disposed to do business, as there is every chance of a reduction in war risk insurance and other expenses which may be reflected in the price of burlap deliveries in time for next spring season's business.

CHARLESTON

Vegetable Meals Scarcer and Many Sellers Are Not Quoting. Blood Scarce and Out of Fertilizer Price Range.

Exclusive Correspondence to "The American Fertilizer"

CHARLESTON, November 3, 1942.

In spite of the anticipated large production of soya meal, there is practically none now being offered.

Nitrogenous.—Temporarily the producers of this material are still out of the market, though they hope to be able to offer a little later.

Castor Meal.—A shortage in arrivals of castor beans at American ports still continues, and sellers are not quoting.

Blood.—This continues extremely scarce. Last quotations were around $5.40 per unit of ammonia ($6.56½ per unit), f. o. b. Chicago, but none is still available for the fertilizer trade.

Cottonseed Meal.—This is beginning to get hard to obtain. Nominal quotations for the 8 per cent grade are: Atlanta, $35.60; Augusta, $35.85; Memphis, $38.00.

CHICAGO

Offerings of Fertilizer Organics Lacking in Volume. Feed Demand Exceeds Materials Supply.

Exclusive Correspondence to "The American Fertilizer"

CHICAGO, November 2, 1942.

Buyers of organics are quick to pick up offerings as they become available, but such offerings are woefully lacking. Indications are that increased supply will not appear this season unless the unexpected should occur.

In the feed market there continues a broad and active demand at ceiling prices. Producers are finding difficulty supplying the consuming requirements.

Nominal prices remain at the ceiling as

Manufacturers' Sales Agents for **DOMESTIC**

Sulphate of Ammonia

Ammonia Liquor :: Anhydrous Ammonia

HYDROCARBON PRODUCTS CO., INC.

500 Fifth Avenue, New York

follows: High grade ground fertilizer tankage, $3.85 to $4.00 ($4.68 to $4.98½ per unit N) and 10 cents; standard grades crushed feeding tankage, $5.53 per unit ammonia ($6.72 per unit N); blood, $5.38 ($6.54 per unit N); dry rendered tankage, $1.21 per unit of protein, Chicago basis.

TENNESSEE PHOSPHATE

Heavy Rains Relieve Water Shortage. Mining and Shipping Active in All Fields. Price Ceilings on Rock Not Equally Fair to All Grades.

Exclusive Correspondence to "The American Fertilizer"

COLUMBIA, TENN., November 2, 1942.

In the last two days of October this area experienced one steady downfall of rain aggregating 3.7 inches, or more than the entire rainfall for September. A few more such beneficial rains will relieve the now pressing shortage of water for phosphate washing as well as for power, and will cause the lush fall growth of small grain, legumes and pastures so necessary for getting through what all signs point to being a hard winter.

Most of the tobacco fields and second crop Irish potato land is green with wheat or other small grain, and the tobacco barns are busily at work stripping and grading and getting ready for the December tobacco auctions.

Mining and preparation of phosphate rock proceed vigorously in all parts of the field, and shipments to all consuming channels continue at a high rate of speed. Washington office of AAA say that no benefit payments under the AAA 1942 program will be made for phosphate applied after September 30th, explaining that the extension until October 31st applied only to limestone. The Illinois committee advise that in Illinois the extension of time applies both to limestone and phosphate. Both say that no further extension can be made, even though the failure of the farmer to make application before the specified date was through no fault of his own or the seller of phosphate.

Order M 240 of the OPA fixes especial ceiling prices for miners of Florida rock and Tennessee brown rock of various grades and fineness of grinding, but these ceilings do not apply to sellers other than miners or to either blue or white rock from Tennessee or the western or other deposits. These ceilings constitute some sharp advances and in some no advance, the fixers evidently not appreciating the difference between long and short tons. Apparently the March, 1942, maximum billings still constitute ceilings for sellers of ground rock who are not miners.

It is reported that a large fertilizer company, whose mining subsidiary now furnishes ground rock to two concerns selling to farmers for direct application, is preparing itself to enter the direct application market again. If ground rock were thus made available to their dealers by all fertilizer manufacturers and fine grinding provided, it appears likely that present use of ground rock would increase manifold to the very great benefit of all concerned.

The principal sellers of ground rock for direct application will probably confine their sales after January 1, 1943, to one grade instead of two, and will doubtless adopt the low grade as giving larger tonnages required.

South Carolina Fertilizer Grades

A report by Dr. H. J. Webb, Chief Chemist of the South Carolina Department of Agriculture, shows that during the fertilizer year ended June 30, 1942, over 80 per cent of the total mixed fertilizer tonnage in that state is included in the following 10 grades: 3–8–5, 4–8–4, 5–7–5, 4–8–6, 4–7–5, 4–10–6, 3–10–3, 2–10–4, 3–8–6, and 10–0–10.

PULVERIZED
MASCOT
LIMESTONE
Trade Mark Registered

MAGNESIUM LIMESTONE
"It's a Dolomite"
American Limestone Company
Knoxville, Tenn.

America's "Field-Marshals" Plan Spring Campaign

★Far from the battlefields, America's farmers are winning another important fight. Theirs is the job of producing the food that will help us and our Allies to win. Much of the credit for the success of their efforts must go to the fertilizers which have been developed for their use. And this is specially true of the complete fertilizers compounded with potash.

★This vital nutrient has brought greatly increased fertility to the soil and made possible healthier, hardier crops.

As suppliers of Sunshine State Higrade Muriate of Potash and the other grades with which you are familiar, we are proud of the part the potash industry is playing on the "food fronts" of the nation.

(trade-mark) Reg. U. S. Pat. Off.

SUNSHINE STATE POTASH PRODUCT OF NEW MEXICO U.S.A.

UNITED STATES POTASH COMPANY, Incorporated, 30 ROCKEFELLER PLAZA, NEW YORK CITY

•

HIGRADE MURIATE OF POTASH 62/63% K_2O Also 50% K_2O Grade

MANURE SALTS 22% K_2O Minimum

MENTION "THE AMERICAN FERTILIZER" WHEN WRITING TO ADVERTISERS.

Van Derlinden Joins Lilly Co.

His many friends in the fertilizer industry will be interested to learn that Lee Van Derlinden has accepted the post of Manager of the Fertilizer Division for the Charles H. Lilly Company, of Seattle, Washington. The company is also one of the leading seed houses on the West Coast and the heavy demands created by the war situation make it necessary that the president of the company, Clarence F. Larsen, devote more of his time to those phases of the business. Mr. Van Derlinden was therefore secured to take charge of the fertilizer department. He was formerly manager of superphosphate sales for the Anaconda Mining Company and later general manager of the fertilizer division of the Ohio Sugar Company.

More Cottonseed Meal Produced

The increased demand for cottonseed meal for feed and fertilizer use is reflected in the Bureau of Census production figures for August and September. During those two months the mills turned out 265,766 tons of cake and meal, compared with 228,162 tons during the same months of 1941. Shipments increased from 219,324 tons in August-September, 1941 to 309,333 tons in 1942. Stocks on hand September 30th were 146,533 tons in 1942 and 173,282 tons in 1941.

Spain and Portugal Advancing Sulphate of Ammonia Production

A by-product recovery plant scheduled to produce 125,000 tons of sulphate of ammonia is to be erected at the iron works at Bilbao, Spain. Another to produce 60,000 tons is in prospect at Sagunt. Two synthetic plants are planned. All these plants, in addition to present production, are expected to produce a total of 175,000 tons of nitrogen annually.

The Government of Portugal has agreed to admit, duty free, equipment for the manufacture of sulphate of ammonia on condition that local manufacturers cannot supply the equipment in a certain time. Supplies of chemical fertilizers for agriculture in Portugal have been difficult to obtain.

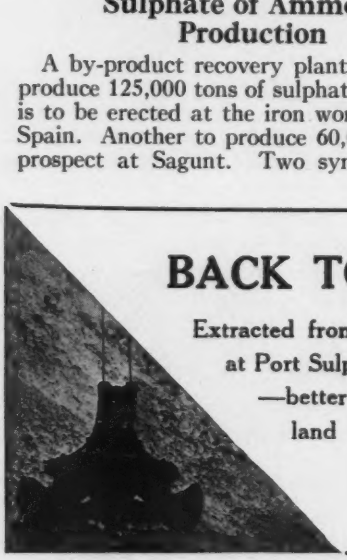
FARM PROSPECTS FORECAST

(Continued from page 11)

Uses of nitrogen fertilizer are being limited to conserve short supplies, and farmers will need to rely more heavily on legumes and farm manures as substitutes. Supplies of phosphorous and potash fertilizers are expected to be adequate. With careful handling, essential needs for insecticides and fungicides apparently can be met, but substitutions may be necessary. Secretary Wickard has approved a tobacco diversion program which should make available an additional 2,000-000 pounds of nicotine sulfate.

Transportation problems may become increasingly severe by the latter part of 1943 in view of the fact that the transportation system is approaching its limits of expansion while the volume of traffic continues to increase. Thus far the big increase in consumer expenditures for foods has been passed back in full to farmers; but current trends in marketing and transportation costs indicate that marketing margins may be increased during the coming year.

Military and Lend-Lease buying of food in 1943 is expected to be 50 per cent greater than this year and will take one-fifth of current agricultural production.



BACK TO THE LAND

Extracted from deposits beneath the Gulf Coast at Port Sulphur, La., and Freeport, Tex., sulphur —better than 99½% pure—goes back to the land in fertilizer to help solve soil problems.

FREEPORT SULPHUR COMPANY
122 East 42nd Street, New York City

A Complete Service

THE strategic factory locations of the American Agricultural Chemical Company, as shown on the accompanying map, assure prompt, dependable service for the complete line of products listed below.

We manufacture all grades of Commercial Fertilizers, Superphosphate, Agrinite Tankage, Bone Black, Bone Black Pigments (Cosmic Black), Dicalcium Phosphate, Monocalcium Phosphate, Gelatin, Glue, Ground Limestone, Crushed Stone, Agricultural Insecticides (including Pyrox, Arsenate of Lead, Calcium Arsenate, etc.), Trisodium and Disodium Phosphate, Phosphorus, Phosphoric Acid, Sulphuric Acid, Salt Cake; and we are importers and/or dealers in Nitrate of Soda, Cyanamid, Potash Salts, Sulphate of Ammonia, Raw Bone Meal, Steamed Bone Meal, Sheep and Goat Manure, Fish, Blood and Tin-Tetrachloride. We mine and sell all grades of Florida Pebble Phosphate Rock.

FACTORIES

Alexandria, Va.
Baltimore, Md.
Buffalo, N. Y.
Carteret, N. J.
Cayce, S. C.
Chambly Canton, Quebec, Can.
Charleston, S. C.
Cincinnati, Ohio
Cleveland, Ohio
Detroit, Mich.
East St. Louis, Ill.
Greensboro, N. C.
Havana, Cuba
Henderson, N. C.
Montgomery, Ala.
Norfolk, Va.
No. Weymouth, Mass.
Pensacola, Fla.
Pierce, Fla.
Port Hope, Ont., Can.
Presque Isle, Me.
Savannah, Ga.
Searsport, Maine
South Amboy, N. J.
Spartanburg, S. C.
West Haven, Conn.
Wilmington, N. C.

The AMERICAN AGRICULTURAL CHEMICAL Co.

50 Church Street, New York City

SALES OFFICES

Alexandria, Va.
Baltimore, Md.
Buffalo, N. Y.
Carteret, N. J.
Charleston, S. C.
Cincinnati, Ohio
Cleveland, Ohio
Columbia, S. C.
Detroit, Mich.
East St. Louis, Ill.
Greensboro, N. C.
Havana, Cuba
Henderson, N. C.
Houlton, Me.
Laurel, Miss.
Montgomery, Ala.
Montreal, Quebec, Can.
New York, N. Y.
Norfolk, Va.
No. Weymouth, Mass.
Pensacola, Fla.
Pierce, Fla.
Port Hope, Ont., Can
St. Paul, Minnesota
Savannah, Ga.
Spartanburg, S. C.
Wilmington, N. C.

INDUSTRY COMMITTEE ADOPTS LIST OF GRADE SUBSTITUTIONS

(Continued from page 8)

Approved Grades for 1942 and 1943

MISSOURI
1940–41 Grades

All grades used on small grains throughout the State and on corn in the northern area of the State bounded by and including the counties of Barton, Cedar, Hickory, Camden, Morgan, Miller, Cole, Osage, Gasconade, Warren, Franklin, St. Louis, Jefferson, St. Genevieve, St. Francois, Madison, Bollinger, Wayne and Butler to be replaced by.....0–12–12, 0–10–20, 0–14–7, 0–14–14, 0–16–8, 0–20–20, 0–20–10, 0–12–24

For grades used on crops other than small grains and corn except as specified above:

Those with 2% Nitrogen to be replaced by.....2–12–6
Those with 3% Nitrogen to be replaced by.....3–9–18, 3–12–12
Those with 4% or more Nitrogen to be replaced by.....4–10–6, 4–16–4, 4–12–4, 10–6–4(A)
Multiple-strength grades*.....3–18–9, 4–24–12

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) To be used only for top-dressing vegetables.

NEW HAMPSHIRE
1940–41 Grades

Those with 2% or less Nitrogen to be replaced by.....0–9–27, 0–14–14, 0–20–20
Those with 3% and 4% Nitrogen to be replaced by.....3–12–6, 3–12–15
Those with 5% or more Nitrogen to be replaced by.....4–9–7, 4–10–10, 4–12–4, 5–3–5(A), 6–3–6(A)
Multiple-strength grades*.....4–16–20, 5–20–10, 6–15–15

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) To be used only for tobacco.

NEW JERSEY
1940–41 Grades

All grades used on grains, except corn to be replaced by....0–12–12, 0–14–7, 0–14–14, 0–16–8, 0–20–20, 0–24–12

For grades used on crops other than small grains:

Those with 2% Nitrogen to be replaced by.....2–8–10, 2–12–6
Those with 3% Nitrogen to be replaced by.....3–12–6
Those with 4% or more Nitrogen to be replaced by.....4–10–5, 4–8–12, 4–10–10, 4–12–4, 4–12–8
Multiple-strength grades*.....3–12–15, 3–18–9, 4–16–8

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

NEW YORK
1940–41 Grades

All grades used on grains, except corn, to be replaced by... 0–12–12, 0–14–7, 0–14–14, 0–16–8, 0–20–20, 0–24–12

All grades used on crops other than small grain:

Those with 2% Nitrogen used on vegetables to be replaced by.....2–8–10
Those with 3% Nitrogen to be replaced by.....3–12–6
Those with 4% or more Nitrogen to be replaced by.....4–8–12, 4–10–5, 4–10–10, 4–12–4, 4–16–4
Multiple-strength grades*.....4–16–8, 3–12–15

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

NORTH CAROLINA
1940–41 Grades

Those with less than 2% Nitrogen to be replaced by.....0–10–10, 0–14–7
Those with 2% Nitrogen to be replaced by.....2–8–10, 2–10–6, 2–12–6
Those with 3% Nitrogen to be replaced by.....2–8–10, 2–10–6, 2–12–6, or 3–8–5, 3–9–6, 3–9–9, 3–12–6
(which must carry more than one unit of organic N)

Stedman FERTILIZER PLANT EQUIPMENT
Dependable for Fifty Years
Founded 1834
All-Steel Self-Contained Fertilizer Mixing Units
Batch Mixers—Dry Batching
Pan Mixers—Wet Mixing
Swing Hammer and Cage Type Tailings Pulverizers
Vibrating Screens
Dust Weigh Hoppers
Acid Weigh Scales
STEDMAN'S FOUNDRY & MACHINE WORKS 505 Indiana Ave. AURORA, INDIANA, U.S.A.

For over 20 years we have served the Fertilizer Industry

ACID-PROOF CEMENT
Ready Mixed—For Immediate Use
Packed in 250-lb. Steel Drums
Dry-Packed in 100-lb. Bags

CHEMICAL PUTTY
Stops Acid, Gas and Water Leaks

QUARTZ PEBBLES
Graded to Size

FILTER GRAVEL, FILTER SAND

ACID VALVES

SOUTHERN DISTRIBUTORS OF
CALGON (Sodium Hexametaphosphate)

ACID BRICK, SPIRAL RINGS

Charlotte Chemical Laboratories
INCORPORATED
Laboratories, Plant, Office
CHARLOTTE, N. C.

DEPENDABLE!

- Large stocks of seasoned materials, available for prompt shipment keyed to your needs.
- Dependable analysis—and every shipment reaches you in good mechanical condition. Write or wire us your next order for

TRIPLE SUPERPHOSPHATE

46 to 48% Available Phosphoric Acid

●

We also manufacture
HIGH-GRADE SUPERPHOSPHATE

●

U. S. Phosphoric Products
Division
TENNESSEE CORPORATION
Tampa, Florida

New York Office:
61 Broadway
Washington, D. C.
716 Investment Bldg.

Sales Agents:
Bradley & Baker
155 East 44th St.
New York, N. Y.

A Mark of FLORIDA TRIPLE 45% PHOSPHATE *Reliability*

SPECIFY
THREE ELEPHANT
BORAX

REG. U.S. PAT. OFF. REG. U.S. PAT. OFF.

. . . . WHEN BORON IS NEEDED TO CORRECT A DEFICIENCY OF THIS IMPORTANT SECONDARY ELEMENT

Agricultural authorities have shown that a lack of Boron in the soil can result in deficiency diseases which seriously impair the yield and quality of crops.

When Boron deficiencies are found, follow the recommendations of local County Agents or State Experiment Stations.

Information and references available on request.

AMERICAN POTASH & CHEMICAL CORPORATION
70 PINE STREET, NEW YORK CITY
Pioneer Producers of Muriate of Potash in America
See Page 4

NORTH CAROLINA (*Continued*) — Approved Grades for 1942 and 1943

Those with 4% Nitrogen to be replaced by....3-9-6, 3-9-9, 3-12-6, 4-9-3(A)
Those with 5% or more Nitrogen to be replaced by....4-8-4, 4-8-6, 4-8-8, 4-10-6, 4-12-4, 4-12-8, 10-0-10(B), 5-5-20(C)

(A) To be used for tobacco plant beds only. (B) To be used for side-dressing. (C) To be used for side-dressing tobacco only.

OHIO

1940–41 Grades

All grades used on small grains and corn, except corn in Lake, Ashtabula, Trumbull, Geauga, Portage, Mahoning, Columbiana, Cuyahoga, and Summit Counties to be replaced by 0–12–12, 0–14–14, 0–20–20, 0–10–20, 0–12–24, 0–9–27, 0–12–36, 0–14–7, 0–16–8, 0–20–10

For grades used on crops other than small grains and corn except as specified above:
Those with 2% Nitrogen to be replaced by....2–12–6
Those with 3% Nitrogen to be replaced by....3–9–18, 3–12–12
Those with 4% or more Nitrogen to be replaced by....4–8–8, 4–10–6, 4–12–4, 4–16–4, 10–6–4(A)
Multiple-strength grades*....3–18–9, 4–24–12, 5–10–10

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) To be used only for top-dressing vegetables.

OKLAHOMA

1940–41 Grades

Those with 2% or less Nitrogen to be replaced by....0–14–7
Those with 3% and 4% Nitrogen to be replaced by....3–12–6, 3–12–9
Those with 5% or more Nitrogen to be replaced by....4–10–7, 4–14–4

PENNSYLVANIA

1940–41 Grades

All grades used on grains, except corn, to be replaced by...0–12–12, 0–14–7, 0–14–14, 0–20–20, 0–16–8, 0–24–12

For grades used on crops other than small grains:
Those with 2% Nitrogen to be replaced by....2–8–10, 2–12–6
Those with 3% Nitrogen to be replaced by....3–12–6
Those with 4% or more Nitrogen to be replaced by....4–8–12, 4–8–16, 4–10–5, 4–10–10, 4–12–4, 4–12–8, 4–12–12, 4–16–4, 10–6–4(A)
Multiple-strength grades*....3–12–15, 3–18–9, 4–16–20, 4–24–12, 4–16–8, 6–15–15, 7–21–7

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) To be used only for top-dressing vegetables.

RHODE ISLAND

1940–41 Grades

Those with 2% or less Nitrogen to be replaced by....0–9–27, 0–14–14, 0–20–20
Those with 3% and 4% Nitrogen to be replaced by....3–12–6, 3–12–15
Those with 5% Nitrogen to be replaced by....4–9–7, 4–10–10, 4–12–4
Multiple-strength grades*....4–16–20, 5–20–10, 6–15–15

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

SOUTH CAROLINA

1940–41 Grades

Those with less than 2% Nitrogen to be replaced by....0–12–12, 0–14–7
Those with 2% Nitrogen to be replaced by....2–12–6
Those with 3% Nitrogen to be replaced by....2–12–6, or 3–8–5, 3–9–6, 3–9–9, 3–12–6 (which must carry more than one unit of organic nitrogen)
Those with 4% Nitrogen to be replaced by....3–9–6, 3–9–9, 3–12–6, 4–9–3(A)
Those with 5% or more Nitrogen to be replaced by....4–8–4, 4–8–6, 4–8–8, 4–12–4, 4–12–8

(A) To be used for tobacco plant beds only.

L. W. HUBER COMPANY
Brokers Fertilizer Materials
170 Broadway NEW YORK, N.Y.
15 Exchange Place JERSEY CITY, N.J.

WILLIAM F. WELLMANN
BROKER
Baltimore, Maryland

Specializing in

Sulphate of Ammonia
Low Grade Ammoniates
Superphosphate
Sulphuric Acid
Bags

Inquiries and offerings invited

KEYSER BUILDING

Produce acid more efficiently

with

CHEMICO

Plants and Equipment

Complete Acid Plants, Acid Concentrators, Ammonia Oxidation Units and Complete Fertilizer Plants designed, installed, and fully guaranteed. Preliminary consultation will involve no charge or obligation. Your inquiry is invited.

CHEMICAL CONSTRUCTION CORPORATION
30 Rockefeller Plaza New York, N. Y.

CHEMICO PLANTS are PROFITABLE INVESTMENTS

FLORIDA PEBBLE PHOSPHATE ROCK

PHOSPHATES — "FROM THE GROUND UP!"

For 37 years we have been producing phosphate rock of all standard grades and to particular specifications for the fertilizer and chemical trades. Our experience includes the manufacture of high purity chemicals from phosphate rock. For this reason we modestly say that we know phosphates "from the ground up." This knowledge we believe is an assurance to you of quality and efficient service.

PM Since 1905

THE PHOSPHATE MINING CO.
110 WILLIAM STREET, NEW YORK • NICHOLS, FLORIDA

Approved Grades
for 1942 and 1943

TENNESSEE
1940–41 Grades

Those with less than 2% Nitrogen to be replaced by.....0–12–12, 0–14–7
Those with 2% and 3% Nitrogen to be replaced by.....2–8–10, 2–12–6
Those with 4% Nitrogen to be replaced by.....3–9–6
Those with 5% Nitrogen to be replaced by.....4–8–8, 4–10–4, 4–12–4
Those with 6% or more Nitrogen to be replaced by.....5–10–5(A)

(A) To be used for vegetables only.

TEXAS
1941–42 Grades

Those with 2% or less Nitrogen to be replaced by.....0–14–7
Those with 3% and 4% Nitrogen to be replaced by.....3–12–6, 3–15–0(A)
Those with 5% or more Nitrogen to be replaced by.....4–8–12, 4–10–7, 4–12–4, 10–10–0(B), 10–20–0(B)

(A) To be used for rice, and for vegetables in the Rio Grande Valley. (B) To be used for vegetables in the Rio Grande Valley.

VERMONT
1940–41 Grades

Those with 2% or less Nitrogen to be replaced by.....0–14–14, 0–20–20
Those with 3% and 4% Nitrogen to be replaced by.....3–12–6, 3–12–15
Those with 5% or more Nitrogen to be replaced by.....4–9–7, 4–10–10, 4–12–4, 5–3–5(A), 6–3–6(A)
Multiple-strength grades*.....4–16–20, 5–20–10, 6–15–15

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) To be used for tobacco only.

VIRGINIA
1940–41 Grades

Those with less than 2% Nitrogen to be replaced by.....0–12–12, 0–14–7, 0–20–20, 0–14–14, 0–16–8, 0–24–12
Those with 2% Nitrogen to be replaced by.....2–8–10, 2–12–6, 2–12–12
Those with 3% Nitrogen to be replaced by.....2–8–10, 2–12–6, 2–12–12, or 3–8–5, 3–9–6, 3–9–15, 3–12–6 (which must carry more than one unit of organic nitrogen)
Those with 4% Nitrogen to be replaced by.....3–9–6, 3–9–15, 3–12–6, 4–9–3(A)
Those with 5% Nitrogen to be replaced by.....4–8–4, 4–8–6, 4–8–12, 4–12–4, 4–16–4
Those with 6% Nitrogen or more to be replaced by.....5–10–5, 10–0–10(B), 10–6–4(B)
Multiple-strength grades*.....3–12–15, 3–18–9, 4–12–8, 4–16–8

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) To be used for tobacco plant beds only. (B) To be used only for top-dressing vegetables.

WEST VIRGINIA
1940–41 Grades

All grades used for grains, except corn, to be replaced by.....0–14–7, 0–16–8, 0–24–12
For grades used on crops other than small grains:
Those with 2% and 3% Nitrogen to be replaced by.....2–12–6
Those with 4% or more Nitrogen to be replaced by.....4–12–4, 4–12–8, 10–6–4(A)
Multiple-strength grades*.....3–18–9

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

(A) To be used only for top-dressing vegetables.

WISCONSIN
1940–41 Grades

All grades used on small grains to be replaced by.....0–9–27, 0–12–12, 0–12–36, 0–14–7, 0–14–14, 0–16–8, 0–20–20, 0–20–10
For grades used on crops other than small grains:
Those with 2% Nitrogen to be replaced by.....2–12–6
Those with 3% Nitrogen to be replaced by.....3–9–18, 3–12–12
Those with 4% or more Nitrogen to be replaced by.....4–10–6, 4–12–4, 10–6–4(A)
Multiple-strength grades*.....3–18–9, 4–24–12

*The same relative reduction in nitrogen shall be made in replacing multiple-strength grades as required for single-strength grades.

NORTH DAKOTA, SOUTH DAKOTA, NEBRASKA, KANSAS, MONTANA, WYOMING, COLORADO, NEW MEXICO, UTAH, NEVADA

The grades to be sold shall be limited to those listed for the nearby States. The sale and use of fertilizer in the States listed above should follow the procedure adopted in nearby States having similar conditions as regards the use of fertilizer.

• SOUTHERN PHOSPHATE CORPORATION •

Miners of FLORIDA LAND PEBBLE

PHOSPHATE ROCK

~ *all commercial grades!*

Plants at Sangully, Pauway, Medulla and Ridgewood, Fla.

MAIN OFFICE • *342 Madison Avenue* • NEW YORK CITY

Tankage
Blood
Bone
All
Ammoniates

JOS. H. SCHMALTZ

BROKER

FERTILIZER MATERIALS

327
South
La Salle
Street
CHICAGO

OFFICIAL BROKER FOR MILORGANITE

MAILING LISTS

GET OUR FREE REFERENCE BOOK *and* MAILING LIST CATALOG FREE

Gives counts and prices on accurate guaranteed mailing lists of all classes of business enterprises in the U. S. Wholesalers—Retailers—Manufacturers by classification and state. Also hundreds of selections of individuals such as professional men, auto owners, income lists, etc.

Write today for your copy

R. L. POLK & CO.

Polk Bldg.—Detroit, Mich.

Branches in Principal Cities

World's Largest City Directory Publishers

Mailing List Compilers. Business Statistics. Producers of Direct Mail Advertising.

ALEX. M. McIVER & SON

Official Brokers for

MILORGANITE

Specializing

CHILEAN NITRATE OF SODA

Nitrogenous Materials

Blood and Fertilizer Tankage

Phosphate Rock

Bone Meals

Manganese Sulphate

SOUTH AMERICAN DRY RENDERED TANKAGE

PEOPLES OFFICE BUILDING

Charleston, S. C.

BUYERS' GUIDE • A CLASSIFIED INDEX TO ALL THE ADVERTISERS IN "THE AMERICAN FERTILIZER"

This list contains representative concerns in the Commercial Fertilizer Industry, including fertilizer manufacturers, machinery and equipment manufacturers, dealers in and manufacturers of commercial fertilizer materials and supplies, brokers, chemists, etc.
For Alphabetical List of Advertisers, see page 33.

ACID BRICK
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.

ACID EGGS
Chemical Construction Corp., New York City.

ACIDULATING UNITS
Chemical Construction Corp., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.

AMMO-PHOS
American Cyanamid Co., New York City.

AMMONIA—Anhydrous
Barrett Division, The, Allied Chemical & Dye Corp., New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.
Hydrocarbon Products Co., New York City.

AMMONIA LIQUOR
Barrett Division, The, Allied Chemical & Dye Corp., New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.
Hydrocarbon Products Co., New York City.

AMMONIA OXIDATION UNITS
Chemical Construction Corp., New York City.

AMMONIATING EQUIPMENT
Sackett & Sons Co., The A. J., Baltimore, Md.

AMMONIUM NITRATE SOLUTIONS
Barrett Division, The, Allied Chemical & Dye Corp., New York City.

AUTOMATIC ELEVATOR TAKEUPS
Sackett & Sons Co., The A. J., Baltimore, Md.

BABBITT
Sackett & Sons Co., The A. J., Baltimore, Md.

BAGS AND BAGGING—Manufacturers
Bagpak, Inc., New York City.
Bemis Bro. Bag Co., St. Louis, Mo.
St. Regis Paper Co., New York City.

BAGS—Cotton
Bemis Bro. Bag Co., St. Louis, Mo.

BAGS—Paper
Bagpak, Inc., New York City
Bemis Bro. Bag Co., St. Louis, Mo.
St. Regis Paper Co., New York City.

BAGS (Waterproof)—Manufacturers
Bemis Bro. Bag Co., St. Louis, Mo.
St. Regis Paper Co., New York City.

BAGS—Dealers and Brokers
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Huber & Company, New York City.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Wellmann, William E., Baltimore, Md.

BAGGING MACHINES—For Filling Sacks
Atlanta Utility Works, East Point, Ga.
Bagpak, Inc., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.

BAG PILERS
Link-Belt Company, Philadelphia, Chicago.

BEARINGS
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

BELT LACING
Sackett & Sons Co., The A. J., Baltimore, Md.

BELTING—Chain
Atlanta Utility Works, East Point, Ga.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

BELTING—Leather, Rubber, Canvas
Sackett & Sons Co., The A. J., Baltimore, Md.

BOILERS—Steam
Atlanta Utility Works, East Point, Ga.

BONE BLACK
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Huber & Company, New York City.

BONE PRODUCTS
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

BORAX AND BORIC ACID
American Potash and Chem. Corp., New York City.
Pacific Coast Borax Co., New York City.

BROKERS
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Dickerson Co., The, Philadelphia, Pa.
Huber & Company, New York City.
Jett, Joseph C., Norfolk, Va.
Keim, Samuel L., Philadelphia, Pa.
McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

BUCKETS—Elevator
Link-Belt Company, Philadelphia, Chicago
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

A Classified Index to Advertisers in "The American Fertilizer"

BUYERS' GUIDE

For an Alphabetical List of all the Advertisers, see page 33

BUCKETS—For Hoists, Cranes, etc., Clam Shell, Orange Peel, Drag Line, Special; Electrically Operated and Multi Power
Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.

BURNERS—Sulphur
Chemical Construction Corp., New York City.

BURNERS—Oil
Monarch Mfg. Works, Inc., Philadelphia, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.

CABLEWAYS
Hayward Company, The, New York City.

CARBONATE OF AMMONIA
American Agricultural Chemical Co., New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.

CARS—For Moving Materials
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CARTS—Fertilizer, Standard and Roller Bearing
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.

CASTINGS—Acid Resisting
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Duriron Co., Inc., The, Dayton, Ohio.

CASTINGS—Iron and Steel
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CEMENT—Acid-Proof
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.

CHAIN DRIVES—Silent
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CHAINS AND SPROCKETS
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CHAMBERS—Acid
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.

CHEMICAL APPARATUS
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Duriron Co., Inc., The, Dayton, Ohio.
Monarch Mfg. Works, Inc., Philadelphia, Pa.

CHEMICALS
American Agricultural Chemical Co., New York City.
American Cyanamid Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Barrett Division, The, Allied Chemical & Dye Corp., New York City.
Bradley & Baker, New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.
Huber & Company, New York City.

CHEMICALS—Continued
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Phosphate Mining Co., The, New York City.
Wellmann, William E., Baltimore, Md.

CHEMICAL PLANT CONSTRUCTION
Atlanta Utility Works, East Point, Ga.
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CHEMISTS AND ASSAYERS
Gascoyne & Co., Baltimore, Md.
Shuey & Company, Inc., Savannah, Ga.
Stillwell & Gladding, New York City.
Wiley & Company, Baltimore, Md.

CLUTCHES
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CONCENTRATORS—Sulphuric Acid
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.

CONDITIONERS AND FILLERS
American Limestone Co., Knoxville, Tenn.
Dickerson Co., The, Philadelphia, Pa.
Phosphate Mining Co., The, New York City.

CONTACT ACID PLANTS
Chemical Construction Corp., New York City.

COPPER SULPHATE
Tennessee Corporation, Atlanta, Ga.

COTTONSEED PRODUCTS
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

CRANES AND DERRICKS
Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

CYANAMID
American Agricultural Chemical Co., New York City
American Cyanamid Co., New York City.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Jett, Joseph C., Norfolk, Va.
Wellmann, William E., Baltimore, Md.

DENS—Superphosphate
Chemical Construction Corp., New York City.
Stedman's Foundry and Mach. Works, Aurora, Ind.

Andrew M. Fairlie
CHEMICAL ENGINEER
23 Marietta Street Building ATLANTA, GA.
CABLE ADDRESS: "SULFACID ATLANTA"

SULPHURIC Acid Plants . . . Design, Construction, Equipment . . . Operation . . . Mills-Packard Water-Cooled Acid Chambers, Gaillard Acid-Cooled Chambers, Gaillard Acid Dispersers, Contact Process Sulphuric Acid Plants.

A Classified Index to Advertisers in "The American Fertilizer"

BUYERS' GUIDE

For an Alphabetical List of all the Advertisers, see page 33

DISINTEGRATORS
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

DRYERS—Direct Heat
Sackett & Sons Co., The A. J., Baltimore, Md.

DRIVES—Electric
Link-Belt Company, Philadelphia, Chicago.

DUMP CARS
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

DUST COLLECTING SYSTEMS
Sackett & Sons Co., The A. J., Baltimore, Md.

ELECTRIC MOTORS AND APPLIANCES
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.

ELEVATORS
Atlanta Utility Works, East Point, Ga.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

ELEVATORS AND CONVEYORS—Portable
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

ENGINEERS—Chemical and Industrial
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

ENGINES—Steam
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.

EXCAVATORS AND DREDGES—Drag Line and Cableway
Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.
Link Belt Speeder Corp., Chicago, Ill., and Cedar Rapids, Iowa.

FERTILIZER MANUFACTURERS
American Agricultural Chemical Co., New York City.
American Cyanamid Company, New York City.
Armour Fertilizer Works, Atlanta, Ga.
Farmers Fertilizer Company, Columbus, Ohio.
International Minerals and Chemical Corporation, Chicago, Ill.
Phosphate Mining Co., The, New York City.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.

FISH SCRAP AND OIL
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Wellmann, William E., Baltimore, Md.

FOUNDERS AND MACHINISTS
Atlanta Utility Works, East Point, Ga.
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

GARBAGE TANKAGE
Wellmann, William E., Baltimore, Md.

GEARS—Machine Moulded and Cut
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

GEARS—Silent
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

GELATINE AND GLUE
American Agricultural Chemical Co., New York City.

GUANO
Baker & Bro., H. J., New York City.

HOISTS—Electric, Floor and Cage Operated, Portable
Hayward Company, The, New York City.

HOPPERS
Atlanta Utility Works, East Point, Ga.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

IMPORTERS, EXPORTERS
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Wellmann, William E., Baltimore, Md.

IRON SULPHATE
Tennessee Corporation, Atlanta, Ga.

INSECTICIDES
American Agricultural Chemical Co., New York City.

LACING—Belt
Sackett & Sons Co., The A. J., Baltimore, Md.

LIMESTONE
American Agricultural Chemical Co., New York City.
American Limestone Co., Knoxville, Tenn.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Wellmann, William E., Baltimore, Md.

LOADERS—Car and Wagon, for Fertilizers
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

MACHINERY—Acid Making
Atlanta Utility Works, East Point, Ga.
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.
Duriron Co., Inc., The, Dayton, Ohio.
Fairlie, Andrew M., Atlanta, Ga.
Monarch Mfg. Works, Inc., Philadelphia, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

MACHINERY—Coal and Ash Handling
Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

MACHINERY—Elevating and Conveying
Atlanta Utility Works, East Point, Ga.
Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

MACHINERY—Grinding and Pulverizing
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

A Classified Index to Advertisers in "The American Fertilizer"

BUYERS' GUIDE

For an Alphabetical List of all the Advertisers, see page 33

MACHINERY—Power Transmission
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

MACHINERY—Pumping
Atlanta Utility Works, East Point, Ga.
Duriron Co., Inc., The, Dayton, Ohio.

MACHINERY—Tankage and Fish Scrap
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

MAGNETS
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

MANGANESE SULPHATE
McIver & Son, Alex. M., Charleston, S. C.
Tennessee Corporation, Atlanta, Ga.

MIXERS
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

NITRATE OF SODA
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Barrett Division, The, Allied Chemical & Dye Corp., New York City.
Bradley & Baker, New York City.
Chilean Nitrate Sales Corp., New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

NITRATE OVENS AND APPARATUS
Chemical Construction Corp., New York City.

NITROGEN SOLUTIONS
Barrett Division, The, Allied Chemical & Dye Corp., New York City.

NITROGENOUS ORGANIC MATERIAL
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
DuPont de Nemours & Co., Wilmington, Del.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Smith-Rowland Co., Norfolk, Va.
Wellmann, William E., Baltimore, Md.

NOZZLES—Spray
Monarch Mfg. Works, Philadelphia, Pa.

PACKING—For Acid Towers
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.

PANS AND POTS
Stedman's Foundry and Mach. Works, Aurora, Ind.

PHOSPHATE MINING PLANTS
Chemical Construction Corp., New York City.

PHOSPHATE ROCK
American Agricultural Chemical Co., New York City.
American Cyanamid Co., New York City
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Phosphate Mining Co., The, New York City.
Ruhm, H. D., Mount Pleasant, Tenn.
Schmaltz, Jos. H., Chicago, Ill.
Southern Phosphate Corp., Baltimore, Md.
Virginia-Carolina Chemical Corp. (Mining Dept.), Richmond, Va.
Wellmann, William E., Baltimore, Md.

PIPE—Acid Resisting
Duriron Co., Inc., The, Dayton, Ohio.

PIPES—Chemical Stoneware
Chemical Construction Corp., New York City.

PIPES—Wooden
Stedman's Foundry and Mach. Works, Aurora, Ind.

PLANT CONSTRUCTION—Fertilizer and Acid
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.

POTASH SALTS—Dealers and Brokers
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
Jett, Joseph C., Norfolk, Va.
Schmaltz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

POTASH SALTS—Manufacturers
American Potash and Chem. Corp., New York City.
Potash Co. of America, New York City.
International Minerals & Chemical Corp., Chicago, Ill.
United States Potash Co., New York City.

PULLEYS AND HANGERS
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

PUMPS—Acid-Resisting
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Duriron Co., Inc., The, Dayton, Ohio.
Monarch Mfg. Works, Inc., Philadelphia, Pa.

PYRITES—Brokers
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., New York City.
Wellmann, William E., Baltimore, Md.

QUARTZ
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.

RINGS—Sulphuric Acid Tower
Chemical Construction Corp., New York City.

ROUGH AMMONIATES
Bradley & Baker, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

A Classified Index to Advertisers in "The American Fertilizer"

BUYERS' GUIDE

For an Alphabetical List of all the Advertisers, see page 33

SCALES—Including Automatic Bagging
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

SCRAPERS—Drag
Hayward Company, The, New York City.

SCREENS
Atlanta Utility Works, East Point, Ga.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

SEPARATORS—Air
Sackett & Sons Co., The A. J., Baltimore, Md.

SEPARATORS—Including Vibrating
Sackett & Sons Co., The A. J., Baltimore, Md.

SEPARATORS—Magnetic
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

SHAFTING
Atlanta Utility Works, East Point, Ga.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

SHOVELS—Power
Link-Belt Company, Philadelphia, Chicago.
Link-Belt Speeder Corporation, Chicago, Ill., and Cedar Rapids, Iowa.
Sackett & Sons Co., The A. J., Baltimore, Md.

SPRAYS—Acid Chambers
Monarch Mfg. Works, Inc., Philadelphia, Pa.

SPROCKET WHEELS (See Chains and Sprockets)

STACKS
Sackett & Sons Co., The A. J., Baltimore, Md.

SULPHATE OF AMMONIA
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Barrett Division, The, Allied Chemical & Dye Corp., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
Hydrocarbon Products Co., New York City.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

SULPHUR
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Freeport Sulphur Co., New York City.
Texas Gulf Sulphur Co., New York City.

SULPHURIC ACID
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.
Wellmann, William E., Baltimore, Md.

SUPERPHOSPHATE
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.
Wellmann, William E., Baltimore, Md.

SUPERPHOSPHATE—Concentrated
Armour Fertilizer Works, Atlanta, Ga.
International Minerals & Chemical Corporation, Chicago, Ill.
Phosphate Mining Co., The, New York City.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.

SYPHONS—For Acid
Monarch Mfg. Works, Inc., Philadelphia, Pa.

TALLOW AND GREASE
American Agricultural Chemical Co., New York City.

TANKAGE
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
Smith-Rowland, Norfolk, Va.
Wellmann, William E., Baltimore, Md.

TANKAGE—Garbage
Huber & Company, New York City.

TANKS
Sackett & Sons, Co., The A. J., Baltimore, Md.

TILE—Acid-Proof
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.

TOWERS—Acid and Absorption
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.

UNLOADERS—Car and Boat
Hayward Company, The, New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.

UREA
DuPont de Nemours & Co., E. I., Wilmington, Del.

UREA-AMMONIA LIQUOR
DuPont de Nemours & Co., E. I., Wilmington, Del.

VALVES—Acid-Resisting
Atlanta Utility Works, East Point, Ga.
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Duriron Co., Inc., The, Dayton, Ohio.
Monarch Mfg. Works, Inc., Philadelphia, Pa.

WHEELBARROW (See Carts)

ZINC SULPHATE
Tennessee Corporation, Atlanta, Ga.

ALPHABETICAL LIST OF ADVERTISERS

For Classified Index, see pages 28 to 32, inclusive

American Agricultural Chemical Co., New York City....21
American Cyanamid Co., New York City..—
American Limestone Co., Knoxville, Tenn..18
American Potash and Chemical Corp., New York City....4, 23
Armour Fertilizer Works, Atlanta, Ga.....16
Ashcraft-Wilkinson Co., Atlanta, Ga. Front cover
Atlanta Utility Works, East Point, Ga....—

Baker & Bro., H. J., New York City, Back cover
Barrett Division, Allied Chemical & Dye Corporation, New York City....—
Bemis Bro. Bag Co, St. Louis, Mo.....—
Bradley & Baker, New York City.....14

Charlotte Chemical Lab., Charlotte, N. C..23
Chemical Construction Corp., New York City....25
Chilean Nitrate Educational Bureau, New York City....34

Dickerson Co., The, Philadelphia, Pa.....—
Dougherty, Jr., E., Philadelphia, Pa.....33
Du Pont de Nemours & Co., E. I., Wilmington, Del....—
Duriron Company, Dayton, Ohio.....—

Fairlie, Andrew M., Atlanta, Ga.....29
Farmers Fertilizer Co., Columbus, Ohio...34
Freeport Sulphur Co., New York City....20

Gascoyne & Co., Inc., Baltimore, Md.....34

Hayward Company, The, New York City..34
Huber Co., L. W., New York City and Jersey City, N. J....24
Hydrocarbon Products Co., New York City.17

International Minerals & Chemical Corporation, Chicago, Ill.... 3

Jeffrey Manufacturing Co., The, Columbus, Ohio....—
Jett, Joseph C., Norfolk, Va.....—

Keim, Samuel D., Philadelphia, Pa.....33

Link-Belt Company, Chicago, Ill.....—

McIver & Son, Alex. M., Charleston, S. C..27

Monarch Mfg. Works, Inc., Philadelphia, Pa....34

Pacific Coast Borax Co., New York City..—
Phosphate Mining Co., The, New York City....25
Polk Co., R. L., Detroit, Mich.....27
Potash Co. of America, Baltimore, Md. 3d cover
Ruhm, H. D., Columbia, Tenn.....34

Sackett & Sons Co., The A. J., Baltimore, Md....—
Schmaltz, Jos. H., Chicago, Ill.....27
Shuey & Company, Inc., Savannah, Ga...34
Smith-Rowland Co., Norfolk, Va.....—
Southern Phosphate Corp., New York City.27
Stedman's Foundry and Machine Works, Aurora, Ind....22
Stillwell & Gladding, New York City.....34
St. Regis Paper Co., New York City 2nd Cover
Synthetic Nitrogen Products Co., New York City....—

Tennessee Corporation, Atlanta, Ga.....—
Texas Gulf Sulphur Co., New York City..34

U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.....23
United States Potash Co., New York City.19

Virginia-Carolina Chemical Corp., Mining Dept., Richmond, Va..... 4

Wellmann, William E., Baltimore, Md....25
Wiley & Company, Inc., Baltimore, Md...34

SAMUEL D. KEIM

By-Products *and* Fertilizer Materials

(SINCE 1898)

1612 MARKET STREET
PHILADELPHIA, PENNA.

E. DOUGHERTY, JR., Manager

MONARCH SPRAYS

This is our Fig. 645 Nozzle. Used for Scrubbing Acid Phosphate Gases. Made for "full" or "hollow" cone in Brass and "Everdur." We also make "Non-Clog" Nozzles in Brass and Steel, and

Stoneware Chamber Sprays

now used by nearly all chamber spray sulphuric acid plants.

CATALOG 6-C

MONARCH MFG. WORKS, INC.
Westmoreland and Emery Sts., Philadelphia, Pa.

---

farm for
VICTORY
NATURAL CHILEAN NITRATE

SHUEY & COMPANY, Inc.

Specialty: Analysis of Fertilizer Materials and Phosphate Rock. Official Chemists for both Florida Hard Rock Phosphate and Pebble Phosphate Export Associations. Official Weigher and Sampler for the National Cottonseed Products Association at Savannah; also Official Chemists for National Cottonseed Products Association.

115 E. BAY STREET, SAVANNAH, GA.

Hayward Buckets

Use this Hayward Class "K" Clam Shell for severe superphosphate digging and handling.
THE HAYWARD CO., 302 Fulton St., New York

GASCOYNE & CO., INC.
Established 1887
Chemists and Assayers
Public Weighers and Samplers
27 South Gay Street - BALTIMORE, MD.

The Farmers Fertilizer Co.
Manufacturers
COMPLETE FERTILIZERS
BULK SUPERPHOSPHATE
SULPHURIC ACID
Acid plant capacity, 45,000 tons Fertilizer plant capacity, 50,000 tons
Get in touch with us COLUMBUS, OHIO

FOR SALE
UP TO 5,000 ACRES OF TENNESSEE
PHOSPHATE LANDS
Mineral Rights or Fee Simple
BEST AND SAFEST PLACE TO INVEST
IDLE MONEY
H. D. RUHM COLUMBIA, TENN.

Stillwell & Gladding
Established 1868
WE MAKE ANALYSES OF
ALL KINDS
130 Cedar Street :: NEW YORK

Sulphur that's ideal for the Fertilizer Industry
AMPLE STOCKS OF 99.5% PURE SULPHUR
TEXAS GULF SULPHUR CO

WILEY & COMPANY, Inc.
Analytical and Consulting Chemists
BALTIMORE, MD.

Get the Latest Edition

It defines many new fertilizer terms which have not appeared in any previous edition of the handy

Pocket Dictionary of Fertilizer Materials

Only 50 cents per copy
Special prices on quantity lots

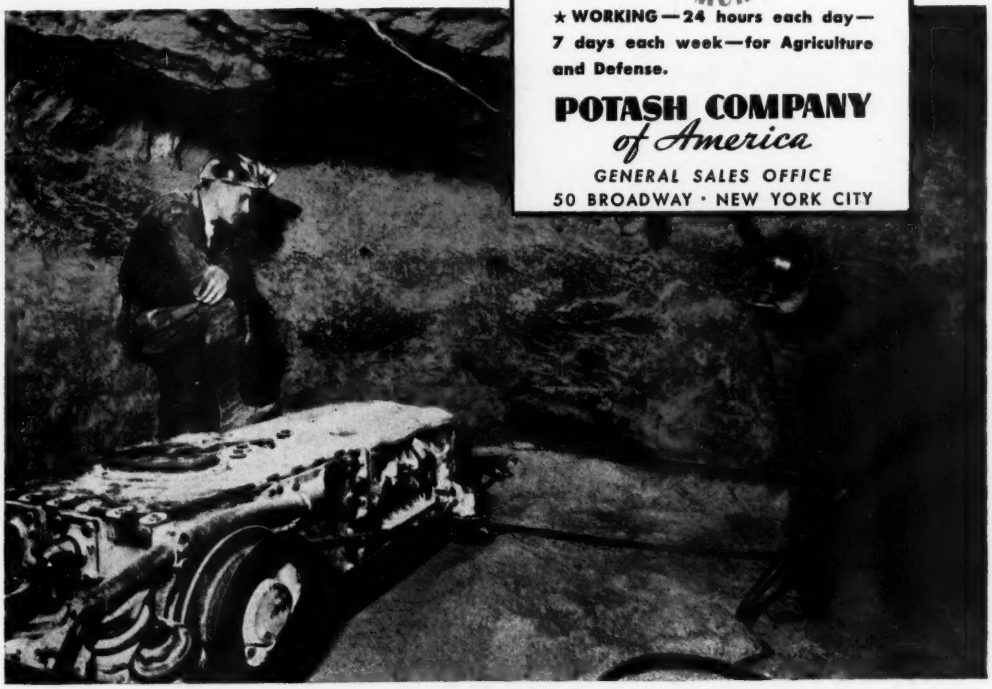
WARE BROS. COMPANY, Publishers, 1330 Vine St., PHILA.

P.C.A.
RED MURIATE

★ WORKING—24 hours each day—7 days each week—for Agriculture and Defense.

POTASH COMPANY
of America

GENERAL SALES OFFICE
50 BROADWAY · NEW YORK CITY



92 YEARS OF SERVICE

EST. 1850

H. J. BAKER & BRO.

271 Madison Ave., NEW YORK

BALTIMORE - CHICAGO - SAVANNAH - TAMPA

Sole Distributors of

DRIED ACTIVATED SLUDGE
SANITARY DISTRICT of CHICAGO

IMPORTERS *EXPORTERS*

POTASH SALTS
SULPHATE of AMMONIA
NITRATE of SODA
PERUVIAN BIRD GUANO
FISH MEAL, BONE MEAL
TANKAGE, BLOOD
NITROGENOUS
AND ALL OTHER
FERTILIZER MATERIALS